

What is claimed is:-

1. A connector device comprising a body portion having a bore defining a housing to receive one of two members to be inter-connected and a stem portion of substantially cylindrical form having a major axis disposed substantially perpendicular to the major axis of said bore defined by the body portion, said stem portion being adapted to be received, in use, in a housing defined by a bore of a second of the two members to be inter-connected by the connector device, and said stem portion comprising in the outer surface thereof an annular groove having the major axis thereof coincident with the major axis of the stem portion and said annular groove being provided axially inwards from the distal end of the stem portion.

2. A connector device according to claim 1, wherein the stem portion is of a hollow tubular form.

3. A connector device according to claim 2, wherein the wall thickness of the stem portion at an axial position aligned with the annular groove is substantially equal to that wall thickness of the stem portion at least at a position to one side of the groove.

4. A connector device according to claim 1, wherein the annular groove is of substantially uniform depth as considered in a circumferential direction of the groove.

5. A connector device according to claim 1, wherein the annular groove is of substantially uniform width as considered in a circumferential direction of the groove.
6. A connector device according to claim 1, wherein the groove is of a curved shape in cross-section.
7. A connector device according to claim 1, wherein the ratio of the axial length of the stem portion to the diameter of the stem portion lies in the range 2 to 0.5.
8. A connector device according to claim 7, wherein said ratio is in the range 1.5 to 0.75.
9. A connector device according to claim 8, wherein said ratio is substantially equal to 1.0.
10. A connector device according to claim 1, wherein the body portion provides an abutment surface at one end of the stem portion for contact, in use, by an end of a housing of said second of the two members to be inter-connected by the connector device.
11. A connector device according to claim 1, wherein the body portion defines a through-bore to receive one of two members to be inter-connected.

12. A connector device according to claim 1, wherein the annular groove at the surface of the stem portion has a width which is at least one quarter of the axial length of the stem portion.

13. A connector device according to claim 12, wherein the width of the annular groove is at least one third of the axial length of the stem portion.

14. A connector device according to claim 1, wherein the stem portion and body portion are integrally formed from cast or moulded material.

15. A connector device assembly for forming a structural interconnection between two members, said assembly comprising a connector device, one of two members to be inter-connected and locking means selectively operable to inter-connect the connector device and said one of two members, said connector device comprising a body portion having a bore defining a housing to receive a first of said two members to be inter-connected and a stem portion of substantially cylindrical form having a major axis disposed substantially perpendicular to the major axis of said bore defined by the body portion, said stem portion being adapted to receive, in use, in a second housing defined by a bore of a second of said two members to be inter-connected by the connector device, said stem portion comprising in the outer surface thereof an annular groove having the major axis thereof coincident with the major axis of the stem portion, said annular groove being provided axially inwards from the distal end of the stem portion, and said locking means being supported by said housing

of the second of said two members to lie either in a retracted position whereby the stem portion may move freely into and out of said housing of the second member or one of at least two locking positions in which the locking means extends into said annular groove, a first of said two locking positions being one at which the locking means inhibits axial movement of the stem portion outwards from said housing of the second member but allows relative rotational movement of the stem portion and housing, and a second locking position being one at which the locking means bears against the stem portion to inhibit both said axial and rotational movements.

16. A method for forming an assembly of inter-connected members in which one elongate member is secured to other members at a plurality of positions axially spaced along the length of the elongate member, said method comprising providing a plurality of connector devices each of a kind in accordance with claim 1 for inter-connecting a first and a second member, providing a plurality of second members each having a housing which defines a bore into which the stem portion of a respective connector device may be received and said housing of the second member comprising locking means adapted for extending into the annular groove of the connector device and to lie either in a retracted position whereby the stem portion may move freely into and out of said housing of the second member or one of at least two locking positions, a first of said two locking positions being one at which the locking means inhibits axial movement of the stem portion outwards from said housing of the second member but allows relative rotational movement of the stem portion and housing and a second locking position being one at which the locking means bears against the stem portion to inhibit both said axial and rotational movements, the method further comprising the steps of providing an

elongate member to extend through a passage defined by one of the connector device and second member of each pair of connector device and second member and of moving locking means of a second member to said first position in the groove of a connector device whilst one or more other pairs of connector device and second member are positioned relative to the elongate member.

17. A method according to claim 16, wherein at least some of the locking members are moved to the second locking position when the inter-connected members of the assembly are in the required positions relative to one another.

18. A method according to claim 16, wherein said one elongate member is provided as a first member which extends through a through-bore defined by at least one connector device of the series.

19. A method according to claim 16 for forming an assembly comprising an inclined hand rail, said method comprising use of said connector devices each of a kind in accordance with claim 1, providing a respective vertical post to extend into the bore of each of said connector devices, and the second of the two members to be inter-connected by each connection device being a three-way type connector having a through-bore, with the inclined hand rail member extending through the through-bores of a plurality of said second members, and arranging the locking means of one second member in said first position to locate axially with one connector device whilst a similar inter-connection is formed between a second and subsequent associated pairs of connector devices and second members, and thereafter moving said locking means to said second position thereby

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to firmly inter-connect at least one of the respective pairs of connector devices and second members.

20. A method according to claim 16 for forming an assembly comprising an inclined hand rail, said method comprising use of said connector devices, providing an inclined hand rail member and arranging said hand rail member to extend through the through-bores of said connector devices, and the second of the two members to be inter-connected by the connection device being a three-way type connector having a bore, providing a respective vertical post to extend into each of said second of the two members, arranging the locking means of one second member in said first position to locate axially with one connector device whilst a similar inter-connection is formed between a second and subsequent associated pairs of connector devices and second members, and thereafter moving said locking means to said second position thereby to firmly inter-connect at least one of the respective pairs of connector devices and second members.

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